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ABSTRACT

Although blacks in the Southern region made up 19 percent of the 1970 population, only about 11 percent of all bachelor's degrees and 9.6 percent of all master's degrees in the region in 1974 went to blacks. Black representation varies widely among fields of study, ranging at the bachelor's level from 2 percent in architecture to 23 percent in social work. Black college graduates have the best employment prospects when two conditions coincide: (1) greater demand than supply, and (2) blacks are especially underrepresented in the field. Fields that meet both conditions include the health specialties, engineering, accounting, computer sciences, public administration, and urban and regional planning. Teacher education and most of the social sciences are fields that least meet these two requirements and in which black graduates have the worst employment prospects. In 1974-75, 40 percent of all bachelor's and master's degrees earned by black students were in the field of teacher education, as compared to only 29 percent of all students. (Editor/LBH)

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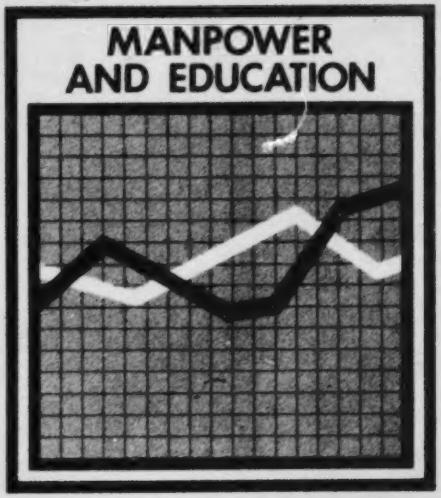

Black College Graduates and the Job Market in the South, 1980

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Highlights

Although blacks in the Southern region made up 19 percent of the 1970 population, it is estimated that only 11.0 percent of all bachelor's degrees and 9.6 percent of all master's degrees in the region in 1974 went to blacks. Black representation, however, varies considerably between fields of study, ranging at the bachelor's level from 2 percent in architecture to 23 percent in social work.

Black college graduates will have the best employment prospects where two conditions coincide: (1) overall demand is projected to exceed overall supply of college graduates trained for an occupational field, and (2) blacks are especially underrepresented in the field.

Fields which meet both conditions include the health specialties, engineering, accounting, computer sciences, public administration and urban and regional planning.

On the opposite end of the employment spectrum lie fields (1) which have a generally crowded occupational outlook, and (2) in which blacks have traditionally been concentrated. Teacher education and most of the social sciences fall in this category. In 1974-75, 40 percent of all bachelor's and master's degrees earned by black students were in the field of teacher education, as compared to only 29 percent of all students.

Black College Graduates and the Job Market in the South, 1980

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1976

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Foreword

The present analysis is a companion to the report, *College Women and the Job Market in the South, 1980.* Like that report, it deals with a group in American society which is underrepresented in many categories of employment opportunity. Like that report, it suggests ways in which future opportunities of a particular group may be enhanced by studying existing differences in job distribution.

Historically, postsecondary education for blacks has responded to the existence of the dual system of education, particularly at the elementary and secondary levels. For many years, preparation of teachers for employment in public schools for blacks predominated as the modal career path toward which black college students were oriented. With the advent of desegregation, demand for black teachers may no longer be determined from a simple count of black students. Furthermore, with the decline of birth rates by the early sixties, the overall demand for teachers has plummeted, and there is wide recognition of overexpansion in teacher education across the nation. These and other developments add impetus to the exploration of training and employment opportunities for blacks over the entire spectrum of college-level programs and fields.

Board staff will be interested in learning from guidance counselors how helpful they find this report in responding to the career development inquiries of black students. It is also hoped that the analysis can contribute to planning for broadened curricula at predominantly black colleges and universities.

Winfred L. Godwin
President

Introduction

The 1980 employment outlook for college graduates in the South, without regard to race and sex, has been analyzed for various fields of study in previous SREB Manpower and Education reports.[1] The present report takes the analysis a step further and assesses the job prospects separately for black college graduates in the region in the ensuing years.

The purpose of projecting the supply of college graduates by race (and sex, in a companion report)[2] and of comparing these estimates to occupational openings is not to develop a set of "quotas" of total projected openings that might be assigned to black graduates in the region in 1980. Instead, the objective of this report is to provide black students in the region—and their counselors—with information to aid in assessing choices of college majors and future career plans.

This report focuses on vocational aspects of education, or in terms of career enhancement. Fields of study, and concentration of blacks in various areas, are reviewed according to employment opportunities. Evaluating education and majors from their economic view seems particularly justified by the evidence of income gains of recent black college graduates. In 1970, for example, median earnings of black male and female college graduates below 30 years of age exceeded those of their white counterparts in seven Southern metropolitan areas (by 2.2 percent and 4.4 percent respectively for males and females). For college graduates aged 30 and older, black women also had higher median earnings than white women (11.5 percent); however, median earnings of older black male college graduates were 33 percent below those of whites.[3]

Although the education-employment perspective of this report disregards other important reasons for a college education, such as personal enrichment and the pursuit of knowledge for its own sake, the intent is not to de-emphasize these educational values. Students, both black and white, in many instances pursue a college degree and decide on certain majors because they are "educating themselves," regardless of what the labor market holds in store. The assessments of this report are not presented to discourage students from such worthy motivations.

There are two interacting dimensions affecting the employment outlook for black college graduates in each field of study. One is the proportion that blacks constitute of college graduates in each field of study, and the other is the general labor market outlook for each field of study in terms of the total supply of college graduates of both races,

relative to the total number of job openings requiring that particular educational preparation.

A field of study in which the proportion of blacks is especially low is more likely to be affected by the influence of equal opportunity or affirmative action programs than is one where blacks are well represented. Despite progress in recent years toward black participation in higher education, the number of black graduates as a proportion of total graduates is still lower than the proportion which blacks constitute of total population. In the Southern region blacks constituted 19 percent of the total population in 1970, but it is estimated that only 11.0 percent of all bachelor's degrees, and 9.6 percent of all master's degrees granted in the region in 1974 went to black students.

The legacy of lower participation by blacks in higher education is one of the reasons for the poor representation of blacks in professional-technical and managerial occupations, a situation which affirmative action programs are designed to overcome. With black representation still considerably below the proportion of blacks in the population in almost all professional-technical and managerial occupations, affirmative action should continue to be a "plus factor" for black college graduates in practically all fields of study. However, there are some fields in which black participation is particularly low, and in which affirmative action may be expected to have relatively stronger impact. For example, for the United States in 1970 only 1 percent of all engineers, 7 percent of all clergymen and 8 percent of all registered nurses were blacks.[4] Thus the disparity of blacks in the occupation versus blacks in the population was about 1 to 11 for engineers, 7 to 11 for clergymen, and 8 to 11 for registered nurses.[5] An occupation in which blacks were well represented in 1970 is social work, 16 percent of social workers being blacks. These differences in black representation in various occupations illustrate that while affirmative action may be a "plus factor" in terms of gaining employment for black graduates in most professional-technical and managerial occupations, it will be a stronger helping force for prospective black college graduates in those fields where they are particularly underrepresented.

In addition to the question of black representation in a particular field of study and occupation, the second dimension in assessing the prospects for black graduates is the general balance between supply (of all races) and demand in that discipline. Affirmative action because of low black representation is less likely to yield very favorable results if there are few openings for college graduates generally. For example, in the U.S. in 1970 only 2.5 percent of all employed persons in the editor-reporter, radio and television announcer and public relations-publicity writer occupations were black. However, the projection of

1980 graduates in communications and journalism shows them exceeding openings by almost 2 to 1 in the Southern region, which weakens the probable impact of affirmative action for black graduates in this field.

This report addresses both of these dimensions. Each field of study is examined in terms of black representation in the field and of the general employment outlook for all graduates. The findings on supply-demand balances in this report are based on the earlier SREB Manpower and Education project reports. Although some of the terms used in the earlier reports are again defined here, readers who wish more detail on the underlying methodology of the supply and demand projections are referred to the prior publications.

Terms and Methods

Openings for College Graduates

The openings projected for 1980 in each occupation show the total estimated openings for all college graduates regardless of race or sex. These openings were projected on the basis of two data sources: the Departments of Employment Security in each state and the National Planning Association employment estimates by states for 1980. The openings projected for college graduates represent the proportion of openings in each occupation estimated to be filled by college graduates on the basis of past trends of college representation in each occupation.

The Supply of Black College Graduates in the Region

Projecting the 1980 supply of black graduates in the region by fields of study depends initially on defining the current base of black graduates. Because of the lack of definitive reports of higher educational graduates by race, estimates of black graduates were constructed for this report in the following manner.

The tape of 1973-74 degree output by fields of study of the U.S. Office of Education was processed to yield a separate count of degrees from the predominantly black institutions in the region. The institutions included are shown in Appendix 1. The 1973-74 degree totals by fields of study for these institutions are shown in Columns 1, 2 and 3 in Table 1 for bachelor's degrees and in Table 2 for master's degrees. The data presented for the predominantly black colleges overstate black degrees to the extent that non-black graduates may attend these institutions.

Degrees granted to black students in non-predominantly black colleges were estimated from the Directory of Minority College Graduates, 1971-72[6] for those institutions in the region that reported their black minority graduates to that directory. Black enrollment in these reporting non-predominantly black institutions in the region was calculated as a percent of black enrollment in all non-predominantly black institutions in the region according to the black enrollment data presented by the Office of Civil Rights report, *Racial and Ethnic Enrollment Data from Institutions of Higher Education, Fall 1972.*[7] This percentage of enrollment served as a proxy for the percentage of degrees represented by the reporting institutions and was applied to obtain a "blown-up" estimate of degrees granted to blacks by both reporting and non-reporting non-predominantly black institutions. The estimate was increased to reflect the overall increase of degrees granted in 1973-74 over 1971-72. The resulting estimates of degrees granted to blacks by predominantly black institutions are shown in

Table 1

Degrees to Blacks, Predominantly and Non-Predominantly Black Colleges, Southern Region, 1973-74 (Bachelor's Degrees)

	Predominantly Black Colleges			Non-Predominantly Black Colleges*		
	Male	Female	Total	Male	Female	Total
Agriculture	209	5	214	10	0	10
Architecture	22	1	23	18	2	20
Biological Sciences	451	415	866	74	83	157
Business & Management, less Accounting	2,080	1,263	3,343	540	220	760
Accounting	357	250	607	91	25	116
Communications	25	49	74	36	25	61
Computer Sciences	37	22	59	19	6	25
Education	1,879	5,525	7,404	482	936	1,418
Engineering	489	7	496	85	21	106
Fine & Applied Arts	142	138	280	108	69	177
Foreign Languages	29	132	161	17	24	41
Health Professions	76	434	510	18	185	203
Home Economics	3	322	325	2	104	106
Letters	188	717	905	117	237	354
Library Sciences	1	25	26	2	8	10
Mathematics	297	297	594	71	71	142
Physical Sciences	234	79	313	67	34	101
Psychology	192	395	587	83	114	197
Public Affairs	255	446	701	43	48	91
Social Sciences & Area Studies	2,349	2,257	4,606	313	639	952
Other	80	34	114	18	2	20
Total	9,395	12,813	22,208	2,214	2,853	5,067

*Estimated

Table 2

Degrees to Blacks, Predominantly and Non-Predominantly Black Colleges, Southern Region, 1973-74 (Master's Degrees)

	Predominantly Black Colleges			Non-Predominantly Black Colleges*		
	Male	Female	Total	Male	Female	Total
Agriculture	30	2	32	5	0	5
Architecture	19	4	23	0	0	0
Biological Sciences	43	45	88	9	9	18
Business & Management, less Accounting	148	35	183	90	55	145
Accounting	0	0	0	8	4	12
Communications	0	0	0	3	9	12
Computer Sciences	0	0	0	3	0	3
Education	1,358	2,480	3,838	240	339	579
Engineering	10	0	10	18	0	18
Fine & Applied Arts	6	12	18	30	18	48
Foreign Languages	4	4	8	6	10	16
Health Professions	1	1	2	0	13	13
Home Economics	0	5	5	0	17	17
Letters	18	58	76	11	59	70
Library Sciences	19	110	129	0	5	5
Mathematics	16	15	31	34	9	43
Physical Sciences	27	13	40	14	2	16
Psychology	40	73	113	3	6	9
Public Affairs	24	51	75	50	123	173
Social Sciences & Area Studies	129	113	242	62	20	82
Other	1	3	4	9	6	15
Total	1,892	3,025	4,917	595	704	1,299

*Estimated

Columns 5, 6 and 7 in Table 1 for bachelor's degrees and in Table 2 for master's degrees.

The 1973-74 proportions of black degrees relative to all degrees by fields of study are shown in Table 3. These percentages were then applied to the projections of 1980 degrees in the region for all races which had been prepared for earlier SREB Manpower and Education project reports. Further detail on methods used to project 1980 degrees is found in the earlier publications.

Using the 1973-74 proportions of black to total degrees by fields of study, and applying these to the 1980 projections of total degrees, implies that the 1973-74 distribution of degrees to blacks among fields of study and the proportion of total degrees awarded to blacks for all fields of study will remain constant for the remainder of the decade. These assumptions may be unduly stringent. However, changes that might occur in these distributions during the next several years will not be large enough to offset the present disparities of black representation in various fields of study and occupations which reflect the underlying perspective of this report.

Education Field of Study

The education field of study classification in this report has been adjusted to include the number of graduates estimated to have earned teaching certificates in conjunction with other academic fields of study. Each academic field of study that contributes graduates with teaching certificates has been adjusted downward by the corresponding estimated percentage of teaching certificates. Unless specifically excepted, graduates with degrees in other majors, but with teaching certificates, are included under education.

Market-Ready Supply of Black College Graduates

Not all college graduates immediately become entrants into the labor market. A small proportion of women become full-time homemakers, some students enter graduate school, and some recipients of graduate degrees are already employed in occupations relevant to their fields of study while completing graduate work. Therefore, the projected college graduates for 1980 are adjusted for these factors to produce "market-ready" graduates.

Black Representation Index

For all fields of study and degree levels combined, the market-ready supply of black college graduates in 1980 is projected to constitute 11.3 percent of total market-ready graduates in the region. However

Table 3

Estimated Proportion of Black Degrees to Total Degrees by Fields of Study and Degree Levels, Southern Region, 1973-74

	Bachelor's	Master's
Agriculture	5.1%	4.2%
Architecture	2.2	4.4
Planning		(7.5)
Biological Sciences	8.9	6.7
Business and Management, less Accounting	12.3	6.2
Accounting	7.7	3.2
Communications	3.0	3.9
Computer Sciences	7.5	1.0
Education	15.3	14.0
Engineering	4.9	1.0
Fine and Applied Arts	5.8	5.4
Foreign Languages	5.5	3.8
Health Professions	6.6	1.0
Nursing	(7.2)	(0.5)
Pharmacy	(6.9)	
Medical Lab Technology	(7.3)	(20.0)
Home Economics	10.7	4.6
Letters	9.0	6.0
Library Sciences	7.3	7.3
Mathematics	14.0	7.2
Physical Sciences	8.3	4.5
Psychology	7.0	8.7
Public Affairs	13.2	9.8
Social Work	(22.7)	(12.1)
Social Science and Area Studies	14.3	9.1
Other	2.3	1.1
All Fields	11.0	9.6

the proportion differs from this overall 11.3 percent share in the various fields of study. For example, market-ready black engineering graduates are projected to represent 4.4 percent of the total in engineering, while the proportion of market-ready black graduates in the field of education is projected as 15.9 percent. Although in both fields blacks are underrepresented relative to their proportion of the entire black population in the region, blacks in education are overrepresented relative to their proportion of market-ready degrees in all fields of study.

The degree of over and underrepresentation of blacks relative to their overall representation in higher education is expressed in this report as an index. The index for engineering, for example, is 39 (or 4.4 percent for engineers divided by 11.3 percent for all fields), while the index for the field of education is 141. The index provides a ready comparison of the extent of black representation in the various fields of study, with values over 100 indicating a higher than average black representation, and one below 100 a lower than average representation. The index values are shown in Table 4, with the fields of study in which blacks are most represented listed first. Fields of study shown in Table 4 include the major fields, as classified by the HEGIS system,[8] plus a selected group of subfields. The subfields were chosen for inclusion because they are disciplines which have direct correspondence to specific occupations, such as nursing which leads to employment as nurses, and city, community and regional planning which corresponds to the occupation of urban and regional planner.

Table 4

Black Representation Indexes by Fields of Study
Southern Region, 1980

Social Work	192
Education	141
Social Sciences	141
Mathematics	128
Business and Management, except Accounting	114
Home Economics	102
Biological Science	81
Letters	81
Library Science	79
City, Community and Regional Planning	*75*
Medical Laboratory Technology	*73*
Accounting	72

Psychology	68
Pharmacy	*64*
Nursing	*62*
Physical Science	60
Veterinary Medicine	*60*
Law	59
Health Fields	58*
Computer Science	58
Fine and Applied Arts	57
Foreign Languages	57
Agriculture and Natural Resources	52
Medicine	*49*
Engineering	39
Dentistry	*34*
Communications	29
Architecture	26
	Less Than 10
Public Administration	
Hospital Administration	
Physical Therapy	
Occupational Therapy	
Medical Record Librarianship	
Dental Hygiene	
Optometry	
All Fields	100

*Excluding first professional degrees

Italicized fields of study are subfields of parent major fields. Unless specifically excluded, the graduates in the subfields are included in the calculations of the index for the major field to which the subfield belongs.

The Outlook

The Best of Both Worlds—Black Underrepresentation and a Favorable Market Outlook

The employment outlook for a black graduate benefits from two directions if he or she has majored in a field in which blacks are especially underrepresented and for which the projected demand in occupational openings exceeds the supply of market-ready graduates regardless of race (see Figure 1). Several fields of study fall into this category and data pertaining to them are summarized in Table 5.

Engineering has been highlighted by the SREB Manpower and Education project and other manpower studies as a field with promising employment prospects in the Southern states for the next several years. The more rapid economic expansion expected in the South compared with other parts of the nation contributes to the promising outlook for engineering graduates once the effects of the recent recession are overcome.

Engineering enrollments have begun to rise, particularly in response to the favorable employment outlook. Yet the number of black engineers in the labor force and in colleges of engineering is still quite low.

In 1970 in the United States less than 1 percent of all engineers with engineering degrees were blacks, reflecting the dearth of blacks coming out of engineering programs in past years. This stark underrepresentation of blacks in engineering has brought on concerted efforts to recruit them and other minorities into college engineering programs. (The group spearheading these efforts is the National Advisory Council on Minorities in Engineering which includes representation from major industries and engineering colleges.)[9] These efforts are proving effective, and black enrollments in engineering programs have increased. From 1972 to 1974 black engineering enrollments in four-year colleges and universities more than doubled and rose from 4 percent of total engineering enrollment to 7.7 percent.[10] This enrollment increase parallels a shift in the percentage of black students choosing engineering as a field of study. In 1972 only 2 percent of all black students in the United States enrolled in four-year colleges were studying engineering; by 1974 this share rose to 3.9 percent.

The shift toward engineering at the undergraduate level appears to be somewhat stronger in the South than for the United States. According to the estimates of 1973-74 degrees constructed for this report, blacks in the region constituted 4.9 percent of the total

Figure 1

Supply and Demand Balances and Representation of Blacks for Selected Fields of Study

	Blacks Underrepresented	Blacks Overrepresented*
Total Demand Exceeds Total Supply of Graduates	Engineering Accounting Computer Sciences Public Administration Hospital Administration Medicine Dentistry Veterinary Medicine Nursing Optometry Other Health Fields	Social Work Business and Management
Total Supply Exceeds Total Demand For Graduates	Law Communications Library Sciences Foreign Languages Fine & Applied Arts Letters Psychology	Education Social Sciences

*"Overrepresented" refers only to the average black representation in all fields of study, and not to the actual percentage of black representation in employment.

Table 5

Favorable Job Outlook and Black Underrepresentation, Southern Region, 1980

	Total Projected Average Annual Openings, 1975-80 For College Graduates	Southern Region Total Projected Annual Market-Ready College Graduates, 1980	Black Projected Market-Ready Annual College Graduates 1980	Index of Black Representation
Engineering	10,900-11,500	11,800	500-550	39
Accounting	5,700- 6,700	6,650	550-600	72
Library Science	2,400- 2,600	1,500-1,900	100-150	79
Computer Sciences	2,600- 3,200	1,100	70-100	58
Urban and Regional Planning	200- 300	200	*	75
Medical Laboratory Technology	2,100- 2,500	2,000	150-200	73
Hospital and Health Care Administration	1,200- 1,500	500	*	**
Nursing	4,200- 5,400	4,900	350-400	62
Dentistry	1,500- 1,690	1,400	55- 60	34
Medical and Osteopathy	4,100- 5,500	4,000	200-250	49
Veterinary Medicine	750- 800	650	*	60
Optometry	200- 300	300	NA	NA
Occupational and Physical Therapy	1,500- 2,000	500	*	**
Dental Hygiene	200- 300	300	*	**
Medical Record Librarianship	300	100	*	**

*Less than 50
**Less than 10

bachelor's degrees in engineering and 1 percent of master's. For the United States, blacks in 1975 represented only 1.9 percent of degrees at the bachelor's level, and .9 percent at the master's level.[11]

While encouraging, the recent shift by some blacks toward engineering represents only a beginning. With engineering projected as a field with good employment prospects, and with the still marked underrepresentation of blacks in the field, there is tremendous potential for more black students to shift to this area.

The health fields generally also present good opportunity for blacks. Supply-demand comparisons show a favorable employment outlook for college graduates in practically all the health occupations, even under assumptions that the present health delivery system will continue virtually unchanged. In the event national policies provide for greater government funding of health services, the demand for persons trained in the various health disciplines will increase even further.

Blacks are underrepresented in all the health fields, at the bachelor's, master's and first professional degree levels, with the underrepresentation particularly severe at the highest level. As shown in Table 4, the index of representation for nursing is 62; the health field in which blacks have the highest index, and for which the outlook is quite favorable, is medical laboratory technology. In many of the other bachelor's level fields, such as therapy, dental hygiene and medical record librarianship, blacks are virtually absent. Yet these are fields for which the employment outlook appears favorable. Hospital administration, a field with an excellent outlook, with graduates primarily at the master's level, has practically no black representation.

The demand for health personnel covered in this report deals only with openings projected to require persons with at least four years of college. The substantial supply of graduates in health-related fields from junior colleges and other postsecondary institutions has not been evaluated to determine how it balances against the openings projected to require less than a college degree. There is substantial participation by black students in paramedical programs at the associate degree level. If, as is probable, the total supply of graduates in the health-related fields at the associate and higher levels combined is less than the projected demand for health occupations, more black students should consider the four-year programs and not stop at the associate degree level. Completion of bachelor's programs in areas such as medical record librarianship and dental hygiene will open the way for the higher rewards often associated with more complete training and broader educational background.

Despite recent gains, blacks continue to be underrepresented in the medical professions—medicine, dentistry, veterinary medicine, optometry and podiatry. The outlook for most of these professions

continues to be one of a scarcity of available total graduates. The estimate of the number of black medical school graduates in the region in 1980 is 230. This includes 183 projected for Meharry Medical School, but does not include any output originating from the new two-year program at Morehouse University. For the United States as a whole, first year black American medical school enrollments rose from 882 in 1971 to 1,036 in 1975, or a 17 percent increase. However, the proportion of blacks of first year enrollments during the period fell slightly from 7.1 percent to 6.8 percent.[12] (During the same four years their percentage of *total* enrollments rose from 4.7 percent to 6.2 percent, indicating that higher retention outweighed first year enrollment increases as a factor in increasing black participation in medical education.)

Dentistry also continues to be a profession with serious underrepresentation of blacks. In 1974, 34 black dentists were graduates from Meharry Medical College and it is estimated that an additional 10 black dentists obtained their degrees in non-predominantly black institutions in the region. The percentage of black dentistry graduates in 1973 for the entire country was 2.8 percent.[13] Blacks represented 5 percent of first year dental school enrollments in the United States in 1973-74, indicating a slow increase in their eventual representation in the profession.[14]

Employment prospects are also favorable in veterinary medicine. Although there is little information on current minority enrollments in this field, black representation is low: in 1970 only .6 percent of all veterinarians in the United States were black.

In 1974, 2.7 percent of the region's active podiatrists were black.[15] There is currently no school of podiatry within the region, but the employment outlook for podiatry is favorable. Supply and demand of optometrists for the region appears balanced. Representation of blacks in optometry, however, is also quite low.

It is estimated that if blacks in the region in 1980 would constitute the same proportion of health professions' graduates (medical, dentistry, veterinary medicine and optometry) as they will represent of graduates at all levels and fields of study, approximately double, or 400 more, would be earning such degrees in the region than is currently expected.

Accounting is another field for which the employment outlook appears favorable, although recent career awareness has resulted in a marked surge by students into accounting courses, so that supply may soon approach demand. Black students also have shown greater interest in accounting courses, and have increased their representation in this field. Public accounting firms have made a special effort to hire more black accountants. In 1969 major accounting firms employed 197 blacks, and this figure rose to 1,005 by 1973.[16] Public

accounting firms provide only a fraction of all accounting openings each year. Accounting is an entree into a wide variety of management and administrative jobs. Black students are well advised to strive for greater representation in this discipline as an avenue of upward mobility in both the public and private sectors of the economy.

One other field is included in Table 5 as one of apparent opportunity congruent with black underrepresentation—library science. Black underrepresentation is less marked in this field than in the others noted in this section. Also, although the job outlook appears favorable, it hinges to some extent on vagaries in public funding, so that there is a degree of uncertainty about the openings projection. Library science majors will probably have more opportunities in rural or outlying areas than in the metropolitan areas to which many graduates have surged. Also, library science is a field in which non-library majors do apply for jobs and are, therefore, competing to some extent with graduates in library science.

There are some other fields in which blacks are underrepresented and for which the employment outlook appears favorable, such as city and regional planning, public administration and computer sciences, but for which it is difficult to make direct comparisons between openings and supply of graduates. In these fields the correspondence between field of study and openings is less direct than for some other disciplines. Openings in each of these areas are filled not just by graduates in the related majors, but also by majors in other fields. The outlook for computer science occupations appears excellent, and blacks are considerably underrepresented in the field. Openings for urban and regional planners exceed the projected supply of graduates in this field, but may also be filled by graduates in other disciplines. Persons with a master's degree in public administration are in demand in state and local government and quasi-public organizations, although positions are often filled by current employees who obtain a master's degree in this field while working in their agencies.

The Other Extreme—Unfavorable Job Market and High Black Representation

The most unfavorable job outlook for black graduates results from the combination of majoring in a field for which the market-ready supply of all graduates exceeds projected openings and in which blacks are so highly represented that the affirmative action factor may be inoperative. Fields falling into this category are education, social sciences, home economics and mathematics.

Declining elementary and secondary school enrollments for the rest of the 1970's translate into a reduced demand for new teachers. Although graduates majoring in education have declined slightly in the

Table 6

Percent of Blacks and Total Students Earning Degrees in Education* and Social Sciences, Southern Region, 1964 and 1973

Percent of Degrees in All Fields, at All Degree Levels

	1963-64**		1973-74		
	Predominantly Black Colleges	All Students, All Colleges	Predominantly Black Colleges	Blacks in†† All Colleges	All Students, All Colleges
Education*	52%	28%	42%	40%	29%
Social Sciences†	14%	13%	18%	18%	13%

*Education in this table does not include graduates with other majors who earn teaching certificates.

**Source: SREB, *A Profile of Degrees Awarded*, 1965

†Social Sciences in 1964 included Social Work. In 1974 Social Work is classified separately.

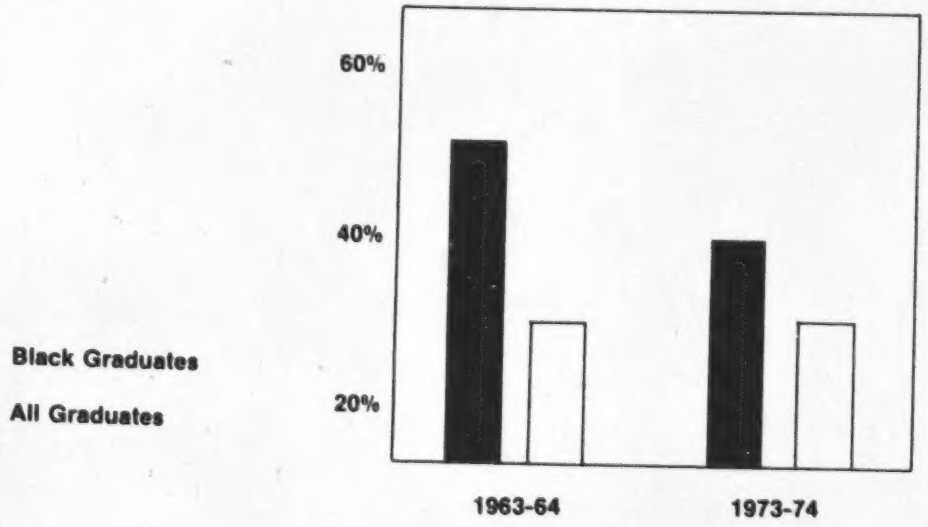
††This is total degrees in predominantly black colleges plus an estimate of black graduates in non-predominantly black colleges.

last two years in the United States, they still considerably exceed available openings for new teachers. The SREB Manpower and Education project estimates a 64,000-68,000 market-ready supply of graduates to teach in 1980 as compared to 52,000-54,000 average annual openings in the region.

Education in years past has been a very popular major for black college students. Recently, however, black students have turned to other fields and, thereby, have begun to lessen their concentration in education. As shown in Table 6, the percentage of students (at all degree levels) graduating with degrees in education from predominantly black institutions in the region dropped from 52 percent in 1964 to 42 percent in 1974. When blacks estimated to have graduated from non-predominantly black institutions are included, the concentration of blacks in education falls to 40 percent. (These proportions do not include majors in other fields with teaching certificates.) Yet blacks are still much more likely to major in education than are all students. In 1974 the estimated proportion of black graduates in the region with education degrees was 40 percent versus 29 percent for *all* students.

Figure 2

Percent of Total Bachelor's and Master's Degrees in Education, Black Graduates, Southern Region, 1963-64 and 1973-74



(All degree levels are included in these comparisons, but the higher concentration of blacks in education is evident at each degree level.)

With the poor job outlook for education majors, and with increased opportunities in other fields, even more black students should shift to fields of study other than education. Yet the choice of probable majors indicated by freshmen students in United States colleges and universities does not give much encouragement that this is happening. In 1970, 11.6 percent of male freshmen in predominantly black institutions chose education. This share rose to 15 percent by 1975. For women freshmen in the predominantly black colleges, 17.2 percent chose education in 1970, and 20.8 percent did so by 1975.[17]

Social science is another area in which blacks are more highly represented than their average representation in all fields of study. With a 141 index of representation as shown in Table 4, the high representation of blacks in social sciences is more marked in 1973-74 degree output in the South than was true a decade earlier. The shift towards social sciences in predominantly black colleges is even greater than shown in Table 6 because social sciences in 1963-64 included social work, which in 1973-74 is covered in a separate classification.

Social science covers numerous disciplines, some of which have better job markets than others. Economics majors, for example, face more job opportunities than do sociology or political science majors. But blacks in social sciences have tended to major in the specialties with the poorer job outlook.

It is more tenuous to assess job openings for social science graduates than for those in fields such as nursing, accounting or engineering because the correspondence between the social sciences to specific occupations is not direct. When all occupations that appear to be related to the social sciences are assessed (sociologists, political scientists, economists, urban and regional planners, etc.) the number of projected 1980 openings is less than one tenth of the number of market-ready graduates in the social sciences. As has always been true, social science graduates will fill openings in business and government doing administrative, sales and other work. However, their chances of obtaining such jobs will be enhanced if they enter the competitive job market with readily applied skills, such as computer programming, statistical analysis or personnel administration.

Blacks have relatively high representation in home economics, with an index of 102. Most of the graduates in home economics are women. Employment prospects are mixed. When openings in occupations directly related to home economics (home management advisors, dietitians, and college home economics teachers) are compared to projected graduates, the market-ready supply vastly exceeds demand. (Home economics graduates with teaching certificates have already

been included in the discussion on education.) Home economics is a good background for occupations less obviously related to this field of study, such as apparel designers, restaurant managers and consumer education advisors. Home Economics graduates with specific skills immediately applicable to these peripherally-related areas may find the job market more promising than appears from a narrow definition of the field.

Mathematics represents a contradiction. Although blacks have a high index of representation in mathematics, the conventional advice is that more blacks should prepare themselves with rigorous mathematics at both the high school and college levels. The contradiction results because the job market for pure mathematics and for teaching mathematics is poor, while it is excellent for graduates who have applied mathematical skills in fields such as computer sciences, engineering, accounting, economics and operations research. Thus, black students are encouraged to place emphasis on mathematics at all levels of their schooling and then to use it in the applied fields with favorable job markets, as discussed in this report.

The Middle Ground

The remaining fields of study may be classified as the middle ground. They are either disciplines in which blacks have relatively high representation but the job outlook is good, or in which the job outlook is poor but, because of underrepresentation, blacks may have an edge through affirmative action programs.

Fields with:

Relatively High Representation and Good Job Prospects	*Few Occupational Openings But Black Underrepresentation**
Business and Management, except Accounting	Architecture
Social Work	Communications
	Foreign Languages
	Fine and Applied Arts
	Law
	Physical Science
	Pharmacy
	Psychology
	Letters
	Biological Sciences

*Listed in the order of the lowest representation first.

A comparison of 1972 and 1974 enrollments reveals that in just two years the proportion of black students in four-year colleges and universities majoring in business and commerce almost doubled.[18] Also, business administration degrees in predominantly black institutions are now spread across the major curriculum areas instead of being concentrated in secretarial courses for women, as was true in the 1960's. The shift to business and management by black students is a healthy trend, and can continue without saturation because of continuing black underrepresentation in the business world. For example, in 1970 in the United States only 1 percent of all bank officers and financial managers and 2 percent of all buyers in wholesale and retail trade were blacks. The potential through affirmative action in the business and management area offers a huge reservoir of opportunities for more black students to shift to this field of study, despite their current above average index of representation.

The field of social work is somewhat different. This is the field of study in which blacks have the highest index of representation. Also they are already represented in social work jobs because of their concentration in this discipline in years past. In the United States in 1970, 16 percent of all social workers were black, versus 11 percent of the population.

The job outlook for graduates in social work depends to a large extent on the direction of governmental policies and funding of social services. If trends of the 1960's continue, the job prospects for social work graduates are excellent, and openings are projected to exceed available graduates. However, current cutbacks in governmental funding have tightened the social worker job market, especially in the metropolitan areas to which graduates flock. These cutbacks make the long-range favorable outlook somewhat questionable. In view of the uncertainty and the already high representation of blacks in the field of study, and in the agencies employing social workers, black students may wish to consider other avenues.

Advice regarding fields in which blacks are underrepresented but for which overall prospects are poor is difficult. For example, it is hazardous to suggest that the crowded situation in communications should discourage blacks from majoring in this field in which they still have low representation. Yet black students may wish to weigh the overall poor market in certain fields which could offset the advantages they have a right to expect from affirmative action programs.

For the field of law, the projected total number of graduates in the region in 1980 exceeds openings by approximately 55 percent. In communications, the surplus is projected to be 75 percent. Architecture and pharmacy are professions with smaller surpluses of approximately 20 and 33 percent respectively.

In what may be described as the humanities—letters, foreign

languages and fine and applied arts—there are very large surpluses. They result to some extent because it is difficult to isolate the relevant occupations for liberal arts graduates except in teaching. Since graduates in the liberal arts with certificates to teach in the primary and secondary schools have already been separated and counted under education, the large number of remaining liberal arts graduates will be competing against a limited number of specifically related jobs. Prospects will be greater if graduates have combined their liberal arts study with courses that provide a saleable skill.

Projected graduates in the physical and biological sciences also exceed directly related occupational openings. However, biological science graduates may find employment in the favorable health occupations; energy research and development may improve the outlook for graduates in the physical sciences. The outlook for psychology majors is poor if they consider only the directly related occupations of psychologists or counselors. If, however, they broaden their focus on the occupations of health aides and welfare service aides, the job market is better.

Black Women and the Job Market

Black women have traditionally outnumbered black men in college enrollments, although this disparity has gradually lessened. In the region it is estimated that in 1973-74 black women earned 57 percent of all bachelor's degrees granted to black students, and 60 percent of all master's. White women, on the other hand, constituted 44 and 47 percent of bachelor's and master's degrees respectively. The higher participation rate by black women is also reflected in their shares of degrees for various fields of study, as shown in Table 7. Although black women, like others, tend to concentrate in education, they have done better than white women in breaking down "male dominance" of certain fields. For example, black women in 1973-74 earned 36 percent of all bachelor's and master's degrees granted to blacks in the region in business and management (including accounting) while white women only garnered 12 percent. The same pattern is found in certain other disciplines, such as computer sciences, physical sciences and public affairs, in which black women have made much greater inroads relative to males than have white female students.

Although black women have tended to choose majors that are more vocationally oriented than white women, there is ample incentive for more of them to shift into such disciplines if job outlook is their prime consideration. The supply-demand balances described earlier in this report, and their implication in terms of favorable and unfavorable job markets, apply to black women as well as to black men.

Table 7

Estimated Percentages of Bachelor's and Master's Degrees Granted to Women by Race and Field of Study, Southern Region, 1973-74

	Percent of Total Black Degrees, Black Women	Percent of Total White Degrees, White Women
Agriculture and Natural Resources	3%	7%
Architecture	11	13
Biological Sciences	49	30
Business and Management, including Accounting	36	12
Communications	57	40
Computer Sciences	32	19
Education	70	71
Engineering	4	2
Fine and Applied Arts	45	62
Foreign Languages	75	77
Health Professions	87	72
Home Economics	99	98
Letters	76	60
Library Science	87	84
Mathematics and Statistics	48	44
Physical Science	27	15
Psychology	65	47
Public Affairs	64	43
Social Sciences and Area Studies	52	34
Other	29	23
All Fields	58	44

Summary and Conclusions

Supply-demand balances of projected graduates in a discipline and relevant occupational openings are important for black college students as they weigh their choice of majors. Although affirmative action programs to overcome black underrepresentation in most professional-technical and managerial occupations may benefit black college graduates, the job search will be easier still for those having degrees in fields where job openings exceed numbers of emerging graduates of both races.

Blacks have made progress in recent years through greater participation in higher education and wider representation over an array of college majors. For example, the prior concentration of black college students in the field of education has been reduced, and their representation in engineering has grown recently. Yet more dispersion across fields of study should occur if black college graduates wish to take full advantage of opportunities created by labor market conditions.

Academic majors which appear promising, and where black students have been considerably underrepresented, include engineering, accounting, computer sciences and the health fields. Although many black students complete two-year programs in the allied health fields, employment opportunities will also be favorable for those completing four-year degrees. Efforts to increase black participation in the health professions (medicine, dentistry, veterinary medicine, optometry and podiatry) should continue not only from an equity viewpoint, but also because of excellent opportunities in the job market.

Business and management is another excellent field in which blacks are urged to major in all the various subspecialties. Blacks are not as seriously underrepresented in the business-management academic areas as they once were, but there is ample opportunity for more to shift to such studies without danger of overcrowding the field. Administrative capabilities will be greatly sought after in all enterprises, so that specialized administrative fields (hospital and health care, public, hotel and restaurant, etc.) appear favorable from a job market perspective.

Education and the social sciences, both areas in which blacks traditionally have tended to concentrate, face poor employment prospects for all races. There are some specialties in the social sciences, such as economics, where the outlook is better, but blacks have tended to major in sociology. The popularity of social work

among black students has made this a field in which they have a higher employment ratio than they do in the population generally. Social work may again become a promising field in terms of job opportunities if governmental funding policies resume the trend of the late 1960's and early 1970's.

Many of the fields in which blacks have been underrepresented and for which the employment outlook is favorable are academic disciplines requiring a strong background in mathematics. Engineering, accounting, computer sciences and economics all have favorable employment prospects, and are fields in which mathematics are applied. It is easier for a student to embark in one of these areas if he or she comes prepared with a strong mathematical background, obtained at the high school and early college levels. It is harder to take advantage of these promising career options if a student must first "catch up" in math. Therefore, black students are urged to take rigorous mathematics courses at the high school and early college levels in order to improve their options to include a variety of fields with good employment opportunities.

The job outlook is not the only consideration in choosing fields of study for black students, any more than it is for white students. Students of all races have other objectives to be satisfied from higher education. Therefore, the humanities will have takers regardless of what the job outlook may be. Students who wish to fulfill non-vocational objectives by majoring in the liberal arts are certainly not to be discouraged from such plans by the projections of manpower-related reports. Those who wish to combine non-vocational objectives with an ounce of practicality are urged to do so by including skills courses that are readily applied to employment. In some instances double majors may be required, a combination of major and unrelated minor, or even an extra quarter or semester in college. This extra effort may be the price required in pursuing education for its own sake, while hedging to support practical needs.

NOTES

1. Richard A. Engels and Eva C. Galambos, *Supply and Demand for College Graduates in the South, 1980,* Southern Regional Education Board, 1975.
2. Eva C. Galambos, *College Women and the Job Market,* Southern Regional Education Board, 1976.
3. Virgyl Christian, Jr., and Ray Marshall, "Black Economic Progress in the South: the Role of Education," *Industrial Relations Research Association Proceedings,* p. 292.
4. U.S. Bureau of the Census, *U.S. Census 1970 Occupational Characteristics (PC2-7A) Table 2.*
5. In 1970 blacks constituted 11 percent of the U.S. population.
6. Manpower Administration, U.S. Department of Labor, *Directory of Minority College Graduate 1971-72,* U.S. Government Printing Office, Washington, 1972.
7. U.S. Department of HEW, Office of Civil Rights, *Racial and Ethnic Enrollment Data From Institutions of Higher Education, Fall, 1972,* U.S. Government Printing Office, Washington, 1972.
8. Higher Education General Information Survey.
9. Robert N. Mills, *The National Effort to Increase Minorities in Engineering,* General Electric Company, Croton-on-Hudson, N.Y., November, 1975.
10. U.S. Bureau of Census, *Major Field of Study of College Students: October, 1974,* Current Population Survey Series P-20, No. 289, February 1976, and *Social and Economic Characteristics of Students: October, 1972,* Current Population Survey Series P-20, No. 260.
11. Scientific Manpower Commission, *Manpower Comments,* January/February, 1976, p. 16.
12. "Datagram," *Journal of Medical Education,* February, 1976, p. 145.
13. Scientific Manpower Commission, *Professional Women and Minorities,* Washington D.C., February, 1976, p. 249.
14. *Ibid.,* p. 426.

15. Eva C. Galambos, *Podiatrists in the South — A Preliminary Manpower Analysis,* Southern Regional Education Board, 1976.

16. William R. Gifford, "Accounting's Aim," *Journal of College Placement,* Winter, 1975, p. 42.

17. Alexander W. Astin, *The American Freshman: National Norms for Fall 1975,* and for *Fall, 1970,* American Council on Education, University of California, Los Angeles, 1970 and 1975.

18. U.S. Bureau of the Census, *Major Fields of Study of College Graduates: October 1974,* Current Population Survey Series P-20, No. 289, February, 1976.

Appendix

Predominantly Black Institutions, Southern Region

Alabama A&M	AL
Alabama State University	AL
Albany State College	GA
Alcorn State University	MS
Allen University	SC
American Baptist Theological Seminary	TN
Arkansas Baptist College	AR
Atlanta University	GA
Barber Scotia College	NC
Benedict College	SC
Bethune Cookman College	FL
Bishop College	TX
Bowie State College	MD
Claflin College	SC
Clark College	GA
Coppin State College	MD
Daniel Payne College	AL
Dillard University	LA
Edward Waters College	FL
Elizabeth City State University	NC
Fayetteville State University	NC
Fisk University	TN
Florida A&M University	FL
Florida Memorial College	FL
Fort Valley State College	GA
Grambling State University	LA
Hampton Institute	VA
Huston-Tillotson College	TX
Jackson State University	MS
Jarvis-Christian College	TX
Johnson C. Smith University	NC
Kentucky State University	KY
Knoxville College	TN
Lane College	TN
LeMoyne-Owen College	TN
Livingston College	NC
Meharry Medical College	TN
Miles College	AL

Mississippi Industrial College	MS
Mississippi Valley State University	MS
Morehouse College	GA
Morgan State College	MD
Morris Brown College	GA
Morris College	SC
Norfolk State College	VA
North Carolina A&T University	NC
North Carolina Central University	NC
Oakwood College	AL
Paine College	GA
Paul Quinn College	TX
Philander Smith College	AR
Prarie View A&M University	TX
Rust College	MS
St. Augustine's College	NC
St. Paul's College	VA
Savannah State College	GA
Selma University	AL
Shaw University	NC
South Carolina State College	SC
Southern University A&M — Baton Rouge	LA
Southern University A&M — Shreveport	LA
Southern University A&M — New Orleans	LA
Spelman College	GA
Stillman College	AL
Talladega College	AL
Tennessee State University	TN
Texas College	TX
Texas Southern University	TX
Tougaloo College	MS
Tuskegee Institute	AL
University of Arkansas — Pine Bluff	AR
University of Maryland — Eastern Shore	MD
Virginia College	VA
Virginia State College	VA
Virginia Union University	VA
Voorhees College	SC
Wiley College	TX
Winston-Salem State University	NC
Xavier University	LA